KHRISTENKO, N.G.

On the distribution of Bithynia leachi Schepp. in the lakes of the Bol'shoye Lake group in Krasnoyarsk Territory [with English summary in insert]. Zool. zhur. 35 no. 10: 1583-1584 O '56.

(MLRA 10:1)

1. Kafedra obschey biologii Krasnoyarskogo gosudarstvennogo meditsinskogo instituta.

(Chulym Valley--Snails) (Liver fluke)

KHRISTENKO, N.V.

Effect of hypoxia on changes in the electroencephalogram. Trudy TSIU 66:269-272 '64.

Selection of the optimal respiration regime in an open thorax. Ibid.:273-281

(MIRA 18:5)

KHRISTENKO, P. I.

Category : USSR/Nuclear Physics - Nuclear Engineering and Power C-8

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6106

Author : Alikhanov, A.I., Vladimirskiy, V.V., Petrov, P.A., Khristenko P.I.

Title : Heavy Water Power Reactor with Gas Cooling.

Orig Pub : Atom. energiya, 1956, No 1, 5-9

Abstract : Discussion of the advantages of heavy water nuclear reactors, which may turn out to be sufficiently economic for use in atomic electric stations. A reactor design is described, in which heavy water is used both as moderator and coolant. The factors affecting the thermal power of the reactor and the efficiency of the power portion, i.e., effecting in the final analysis the electric power of the atomic electric station, are considered. The authors reach the conclusion that the atomic electric station can be profitable if natural uranium is used, accompanied with deep burnup and maximum possible electric power, with a certain reduction in efficiency.

A heavy water power reactor with gas cooling is described. The use of gas in combination with heavy water moderator

Card : 1/2

KHRISTENKO, P. L., PETROV, P. A., MITROPOLEVSKIY, V. A., SINELNIKOV, K. D., IVANOV, V. E. and ZELENSKIY, V. F.

"Pin Fuel-Element for Gas-Cooled Heavy-Water Power Reactor."

paper presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sep 58.

CHRISTENKO, P.I. [Khristenko, P.I.]; PETROV, P.A.; MITROPOLEVSKIJ, V.A. [Mitropolevskiy, V.A.]; SINELNIKOV, K.D. [Sinel'nikov, K.D.]; IVANOV, V.J. [Ivanov, V.Ye.]; ZELENSKIJ, V.F. [Zelenskiy, V.F.]; MAKVART, J. [translator]; KLIK, F. [translator]

Pin fuel-element for gas cooled heavy water power reactors. Jaderna energie 4 no.11:330-338 N '58.

KHRISTENKO, P.I.

21(4)

PHASE I BOOK EXPLOITATION SOV/2714

International Conference on the Peaceful Uses of Atomic Energy. 2nd, Geneva, 1958

Doklady sovetskikh uchenykh; yadernoye goryucheye i reaktornyye metally. (Reports of Soviet Scientists; Nuclear Fuel and Reactor Metals) Moscow, Atomizdat, 1959. 670 p. (Series: Its: Trudy, vol. 3. 8,000 copies printed.

Ed. (Title page): A.A. Bochvar, Academician, A.P. Vinogradov, Academician, V.S. Yemel'yanov, Corresponding Member, USSR Academy of Sciences, and A.P. Zefirov, Doctor of Technical Sciences; Ed. (Inside book): V.V. Pozvoronov and G.M. Pchelintseva; Tech. Ed.: E.I. Mazel'.

PURPOSE: This volume is intended for scientists, engineers, physicians, and biologists working in the production and peaceful application of atomic energy; for professors and students of schools of higher technical education where the subject is taught; and for people interested in atomic science and technology.

COVERAGE: This is volume 3 of a 6-volume set of reports on atomic energy, presented by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy, held in Geneva from September 1 to 13, 1958. Volume 3 consists of two parts. The first part, edited by A.I. Zubov, is devoted to geology, prospecting, concentration and processing of nuclear source material. The second part, edited by G.L. Zverev, includes 27 reports on metallurgy, metallography, processing technology of nuclear fuels and reactor metals, and neutron irradiation effects on metals. The titles of the individual papers in most cases correspond word for word with those in the official English language edition on the Conference proceedings. See SOV/2081 for the titles of the other volumes of the set.

Khristenko, P.I., P.A. Petrov, V.A. Mitropolevskiy, K.D. Sinel'nikov, V.Ye. Ivanov, and V.F. Zelenskiy. Assembly of the Rod-shaped Heat Producing Element for a Heavy Water Gas-cooled Power Reactor (Report No. 2053) 655

AVAILABLE: Library of Congress

Card 11/11

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21.1920

78520
SOV/89-8-3-5/32

AUTHOR: Khristenko, P. I.

TITLE: Thermodynamic Possibilities of Turbine Operation Using Organic Liquids Heated in Power Reactors

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 3, pp 214-218 (USSR)

ABSTRACT: Some organic heat carriers could be used to drive turbines using heat acquired directly from a nuclear reactor. One can avoid the use of water vapor because during expansion the saturated vapors of these organic substances become overheated, although their temperature decreases. Figure 2 shows the temperature-entropy TS diagrams of water, diphenyl oxide, and mercury. If diphenyl oxide is heated up to temperature T_1 and enters a nozzle, it expands adiabatically to temperature T_2, and the resulting jet consists then of overheated, saturated, or weakly humid vapor which can be aimed directly on the blades of the turbine and later condensed in the condenser. Behavior similar to that

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Thermodynamic Possibilities of Turbine Operation Using Organic Liquids Heated in Power Reactors

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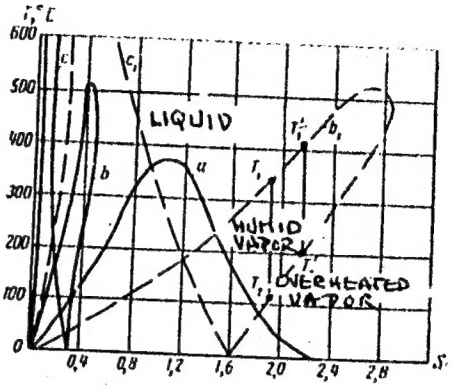

Fig. 2. TS-diagram for water, diphenyl oxide, and mercury. (a) Water; (b) diphenyl oxide; (c) mercury (referred to 1 kg of saturated vapor); (b_1) diphenyl oxide; (c_1) mercury (referred to 6 kg of saturated vapor).

of diphenyl oxide can be expected from kerosene, ethyl ether, dautherm, and probably N-hexane, acetic acid, and naphthalene. The author discusses the thermodynamic cycles in which directly heated liquids are used and discusses their efficiencies compared to that of a Carnot engine. If diphenyl oxide is used,

Card 2/5

one has to keep in mind that at 15 atm and 440° C, 1-2% dissociates during 700 hr. Looking at the diagram on Fig. 2, one sees that the starting temperature of the liquid entering the turbine could be fixed at 300-400° C, and the final could be 120-200° C. This would correspond to beginning pressures of approx. 2.0-16.5 atm absolute, and final pressures of 0.015-0.15 atm abs. Since the final pressure of the liquid is comparatively high, the turbine could be used as a first stage, and the remaining heat energy could be used in a second water vapor stage, as shown on Fig. 5. Using in such binary cycle $t_1 = 350°$ C, $t_p = 200°$ C, $t_{cooler} = 350°$ C, the thermal efficiency is 0.43. Taking for the internal efficiency of the turbine 0.75, mechanical 0.96, electrical 0.97, and the coefficient of utilization of the theoretical cycle 0.9, such a device may have an overall efficiency of 27%. This is quite high, considering that the

Thermodynamic Possibilities of Turbine Operation Using Organic Liquids Heated in Power Reactors

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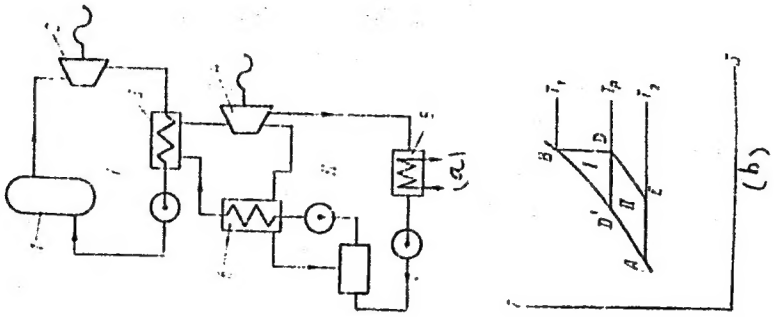

Fig. 5. Scheme (a) and TS-diagram (b) of the binary cycle: Stage I-heated diphenyl oxide; stage II--saturated water vapor; (1) reactor; (2,4) turbines; (3,5) condensers; (6) regenerative heater.

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Thermodynamic Possibilities of Turbine Operation Using Organic Liquids Heated in Power Reactors

78320
SOV/89-8-3-5/32

pressure of diphenyl oxide never exceeds 6 atm abs. The author further discusses the properties of dautherm and also the nozzle velocities of jets in the proposed turbine, and concludes that it would not be difficult to construct turbines from a few hundred to a few tens of thousands of kilowatts. The cost should not exceed that of conventional turbines. On the other hand, there would be no need, using the proposed cycle, for building the stage I generators working with water vapor at 30-40 atm abs of pressure. There are 5 figures; and 2 Soviet references.

SUBMITTED: April 11, 1959

Card 5/5

21407
S/089/61/011/006/003/014
B102/B138

21.1000

AUTHOR: Khristenko, P. I.

TITLE: Ways of increasing the power output of a gas-cooled reactor

PERIODICAL: Atomnaya energiya, v. 11, no. 6, 1961, 506 - 514

TEXT: Three possibilities are discussed in detail and formulas are derived for calculating the thermodynamic cycle in each case. (1) Increasing the coolant flow rate by increasing its pressure in the loop. This method is most effective, since power output increases almost linearly with increasing coolant pressure until a certain (optimum) pressure is reached. If c_p = const and $c_p dT = TdS$ hold for the coolant gas, the thermal efficiency is given by $\eta_t = 1 - \frac{\ln(T_1/T_p)}{2T_1 - T_p}$, and the thermal power output by $N_T = gc(t_2 - t_1)$, where g denotes the flow rate, c the heat capacity, and $(t_2 - t_1)$ the preheating temperature of the coolant. For a reactor without end reflectors

$$t_2 - t_1 = A\left(\sqrt{\frac{A^2}{4} + 1} - \frac{A}{2}\right)[(t_n)_m - t_1] = \varphi(A)[(t_n)_m - t_1]; \quad (\varphi(A) \leq 1) \qquad (4)$$

Card 1/8 4

Ways of increasing the...

and with,

$$t_2 - t_1 = \frac{A\left(\sqrt{\frac{A^2}{4}\frac{1}{\sin^2(n)}+1}-\frac{A}{2}\right)}{\frac{A^2}{4}\left(\frac{1}{\sin^2(n)}-1\right)+1}\times$$

$$\times[(t_n)_m - t_1],$$

$$t_2 - t_1 = \Phi(A)[(t_n]_m - t_1]. \qquad (8)$$

$$\Delta t_u = \sqrt{[2(t_n)_m - (t_2+t_1)]^2 - \frac{1}{\sin^2(n)}(t_2+t_1)^2}\,. \qquad (8a)$$

with $A = (t_2 - t_1)/\Delta t_u = H\alpha\eta_h/gc$. Fig. 1 shows the optimum TS diagram; T_1 is the temperature of the gas heated in the reactor (point B), T_p the same at point C. (2) Increasing the pressure by additional cooling before the gas blower. This method brings about a 50% decrease in power consumption for circulation. Calculations for a special case give an increase of 9.0% in efficiency due to additional cooling. For a special case ($A = 2.4, \varphi(A) = 0.869$) where additional cooling causes a reduction from $t_2 - t_1 = 334°C$ ($t_2 = 449°C$) to $t_2 - t_1 = 365°C$ ($t_2 = 445°C$), the

Card 2/04

Ways of increasing the...

efficiency of the unit can be raised by a factor of 1.32. If the gas is then fed back to the reactor core (Fig. 4) the increase in efficiency reaches 6 - 7% and the electric current costs are reduced by 15 - 25%. (3) Profiling the coolant flow. This method is based on a special design for the cooling system; its dimensions should be such that the thermal energy transferred to the coolant are distributed over the coolant circuit as uniformly as possible. This thermal balancing can be achieved in two different ways: Either the coolant flow rate W varies and Δp = const, or W = const. The first must be used for gas-cooled reactors. The coolant cross section depends on the thermal power ratio μ_1/μ_0 of two fuel rods or two reactor channels. $\mu_1/\mu_0 = \frac{g1}{g_0} \frac{(t_2 - t_1)}{[(t_2)_0-(t_1)_0]}$

is calculated for variable W:

$$\left(\frac{\mu_1}{\mu_0}\right)=\left(\frac{1-\varepsilon_0}{\varepsilon_0}\cdot\frac{\varepsilon_1}{1-\varepsilon_1}\right)^{\frac{2(3m-n)+1}{2-n}}\times$$

$$\times\frac{\left(\sqrt{1+\frac{4}{A_1^2}}-1\right)}{\left(\sqrt{1+\frac{4}{A_0^2}}-1\right)}. \qquad (14)$$

Card 3/6 4

and for W = const:

$$\left(\frac{\mu'}{\mu_0}\right)=\left(\frac{1-\varepsilon_0}{\varepsilon_0}\cdot\frac{\varepsilon_1}{1-\varepsilon_1}\right)^{1+m}\times \times\frac{\left(\sqrt{1+\frac{4}{A_1^2}}-1\right)}{\left(\sqrt{1+\frac{4}{A_0^2}}-1\right)}, \quad A_1=A_0\left(\frac{1-\varepsilon_0}{\varepsilon_0}\cdot\frac{\varepsilon_1}{1-\varepsilon_1}\right)^{1+m}. \qquad (15)$$

ε_1 is the part of the fuel assembly area occupied by the rods. m is the factor of power consumption decrease due to additional cooling. There are 6 figures and 1 Soviet reference.

SUBMITTED February 18, 1961

CARD 4/04

L 16475-66 EWT(m)/ETC(f)/EPF(n)-2/EWG(m) WW/DM
ACC NR: AP6005527 (N) SOURCE CODE: UR/0089/66/020/001/0026/0029

AUTHOR: Khristenko, P. I.

39
B

ORG: none

TITLE: Plutonium reprocessing in heavy-water-moderated power reactors

SOURCE: Atomnaya energiya, v. 20, no. 1, 1966, 26-29

TOPIC TAGS: thermal reactor, nuclear power reactor, water moderated reactor, plutonium, reactor fuel processing, isotope, uranium

ABSTRACT: The author considers operation of a thermal power reactor with continuous fuel recharging in stationary conditions for the case of steady-state equilibrium (or near-equilibrium) concentration of Pu^{239}, Pu^{240} and Pu^{241} and constant sustained concentration of U^{235} and fission fragments in U^{238}. In order to maintain these operating conditions, it is necessary to use fresh fuel to replace that portion in which the fragment concentration surpasses the permissible value. The fragments are removed from a portion of the unloaded fuel which is then recycled. The plutonium is extracted from the remaining (smaller) portion of the fuel which is

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then discarded as depleted and replaced with natural uranium. Formulas are derived for calculating uranium depletion in thermal power reactors. Orig. art. has: 1 figure, 10 formulas.

SUB CODE: 18/ SUBM DATE: 25Aug64/ ORIG REF: 002/ OTH REF: 000

Card 2/2 mc

KHRISTENKO, P.N., inzh.

Effect of mining geology and organizational and technical factors on the degree of difficulty of mining haulage drifts by narrow work in flat seams of Donets Basin mines. Ugol. Donbass no.32:108-118 '63. (MIRA 17:10)

YEPIFANTSEV, Yu.K., kand. tekhn. nauk; KHRISTENKO, P.N., inzh.

Expediency of reducing the number of simultaneously active faces in development workings of Donets Basin mines. Sbor. DonUGI no.[illegible]114-123 '63. (MIRA 16:10)

(Donets Basin--Coal mines and mining--Labor productivity)

KHRISTENKO, P.N., inzh.

Study of the distribution of stresses around drifts made in thin pitching coal seams under conditions found in the Donets Basin. Sbor.DonUGI no.26:135-173 '62. (MIRA 16:6)
(Donets Basin--Mining engineering) (Strains and stresses)

KHRISTENKO, P.S.

Results of treatment with Shcherbintsy mineral water. Vrach.delo no.8:859 Ag '58 (MIRA 11:8)

1. Kafedra fakul'tetskoy terapii (zav. - prof. N.B. Shchupak) Chernovitskogo meditsinskogo instituta i oblastnaya klinicheskaya bol'nitsa.

(SHCHERBINTSY--MINERAL WATERS, SULFUROUS)

SOKOLOVSKIY, Yuriy Iosifovich, dotsent; SHILOV, Vasiliy Ivanovich, inzh.; KHRISTENKO, V.I., kand.tekhn.nauk, otv.red.; NESTERENKO, A.S., red.; TROFIMENKO, A.S., tekhred.

[Photon spaceship; possibilities and difficulties of a flight beyond the solar system] Fotonnyi zvezdolet; o vozmozhnostiakh i trudnostiakh poleta za predely Solnechnoi sistemy. Khar'kov, Izd-vo Khar'kovskogo gos.univ., im. A.M.Gor'kogo, 1960. 45 p. (MIRA 13:6)

(Interplanetary voyages)

KHRISTENKO, V.P., red.

[The construction of thermal electric power plants is a principal trend in the development of power engineering] Stroitel'stvo teplovykh elektrostantsii - glavnoe napravlenie razvitiia energetikia. Moskva, Orgenergostroi, 1964. 63 p. (MIRA 17:9)

1. Vsesoyuznyy institut po proyektirovaniyu organizatsii energeticheskogo stroitel'stva "Orgenergostroy.". Moskovskiy filial.

BROMER, D.L.; ROZANTSEV, S.N.; KHRISTENKO, V.P.; VOLKOV, S.V., tekhn.red.

[Housing management; reference manual for workers in housing management and in offices administering apartment houses] Upravlenie zhilishchnym khoziaistvom; spravochnoe posobie dlia rabotnikov domoupravlenii i zhilishchno-ekspluatatsionnykh kontor. Izd.2., perer. Moskva, Izd-vo M-va kommun.khoz. RSFSR, 1959. 302 p. (MIRA 12:5)

(Housing management)
(Dwellings—Maintenance and repair)

NOSOV, R.P., glav. red.; POLONSKIY, G.A., red.; USTINOV, A.D., red.; FRENKEL', G.Ya., red.; RUBINOV, A.B., red.; KHRISTENKO, V.P., red.; BORUNOV, N.I., tekhn. red.

[Protection of metal structures and mechanical equipment against corrosion in hydraulic engineering; from materials of a conference held by the "Gidromontazh" Trust of the Ministry of Electric Plant Construction of the U.S.S.R. on 24-26 June. 1960]Zashchita metallokonstruktsii i mekhanicheskogo oborudovaniia gidrotekhnicheskikh sooruzhenii ot korrozii; po materialam soveshchaniia, provedennogo trestom "Gidromontazh" Ministerstva stroitel'stva elektrostantsii SSSR 24-26 iiunia 1960 g. Moskva, Gosenergoizdat, 1961. 55 p. (MIRA 15:7)

(Hydraulic structures--Corrosion) (Protective coatings)

ACC NR: AP7002555 (A,N) SOURCE CODE: UR/0413/66/000/023/0036/0036

INVENTOR: Mende, F.F.; Dmitriyev, V.M.; Khristenko, Ye.V.; Borodavko, Yu.M.

ORG: none

TITLE: Method of obtaining stable frequency from a nonstable uhf oscillator. Class 21, No. 189029 [announced by Physico-technical Institute of Low Temperatures, AN UkrSSR (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 36

TOPIC TAGS: uhf oscillator, frequency stability, AMPLITUDE MODULATION

ABSTRACT:

To simplify the stabilization system used to obtain a highly stable frequency from a nonstable uhf oscillator which utilizes a superconductive resonator, it is proposed that the oscillator signal be amplified by an amplitude

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ACC NR: AP7002555

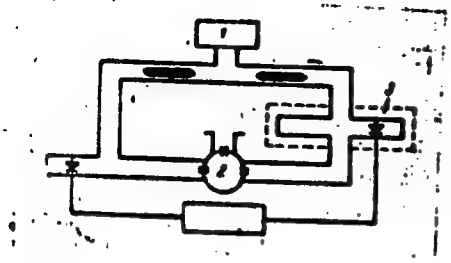

Fig. 1. Stabilization system

1 - Uhf oscillator; 2 - superconductive resonator; 3 - amplitude modulator.

modulator such as a waveguide twin T-joint with a detector, which is supplied with a difference signal of the oscillator carrier frequency and of the side frequency. The latter is obtained as a result of amplitude modulation of the oscillator carrier frequency and is separated with the help of the above-mentioned resonator. [JP]

SUB CODE: 09/ SUBM DATE: 20May65/ ATD PRESS: 5114

Card 2/2

KHRISTESASHVILI, G.

Card 1/2 COMMUNICATIONS FACILITIES IN GEORGIAN SSR

COMMUNICATIONS FACILITIES IN GEORGIAN SSR -- Tbilisi, Zarya Vostoka, 26 Feb 57

Speaking at a meeting of republic communications workers, G. Khristesashvili, Minister of Communications Georgian SSR, noted that the major work indexes exceeded the plan by a considerable margin. In particular, the capital construction plan and the plan for retail distribution of newspapers and magazines were exceeded [illegible]. Telephones were installed in almost 90 more kolkhozes than planned, and the plan for developing the network of communications enterprises was fulfilled. A television center was put into operation and the capacity of interurban telephone and telegraph circuits was increased by installing multichannel high-frequency apparatus.

Card 2/2 COMMUNICATIONS FACILITIES IN GEORGIAN SSR

However, there were serious shortcomings in the work of communications enterprises during 1956. In Zugdidskiy Rayon Communications Office, postal matter was stolen on four occasions, while 44,000 rubles were embezzled in nine branch communications offices of the Tbilisi Main Post Office. Postal service in rural areas is bad. Kolkhoz mailmen in Kobuletskiy, Shuakhevskiy, Dzhavskiy, and other rayons are at work only three times a week. Directors of the Tbilisi Telegraph Office are not trying to eliminate delay in telegram transmission and [illegible]. The number of interurban telephone calls involving a wait of over an hour and the number of uncompleted calls have increased sharply.

KHRISTESASHVILI, G.A.

KHRISTESASHVILI, G.A.

Using passenger buses to transport mail. Vest.sviazi 17 no.10:41 O '57. (MIRA 10:11)

1. Ministr svyazi Gruzinskoy SSR.
(Georgia--Postal service)

111-58-6-9/25

AUTHOR: Khristesashvili, G.A., Minister of Communications of the Georgian SSR

TITLE: The Development of Multiprogram Broadcasting in Georgia (Razvitiye mnogoprogrammnogo veshchaniya v Gruzii)

PERIODICAL: Vestnik Svyazi, 18 Nr 6, 1958, pp 15-16 (USSR)

ABSTRACT: Since 1953, the power of radio facilities in Georgia has increased by more than 6 times. New transmitters put into operation have permitted the organizing of multiprogram broadcasting in aboriginal languages. The new items are listed as follows: the TV-center built in Tbilisi on the David mountain with an antenna-tower of 180 m, the total height over the town being of 500 m; two v.h.f. FM transmitters duplicating the first and the second broadcasting programs put into operation in January 1958; a mobile TV-station of "PTS-52" type; a TV relay station with an active range of 25 to 30 km put into operation in Gori. Engineers and technicians of the Georgian SSR radio center, Salibekashvili, Zayonchik, Kordzakhiya, T. Tkhor, B. Tkhor, Udzhmadzhuridze, Azatyan, Khachaturyan, Teymurov, etc, participated in the assembling and adjusting of the above stations.

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111-58-6-9/25

The Development of Multiprogram Broadcasting in Georgia

This year, five more relay stations will be installed in towns and rayon centers at a distance of 100 km and more from the Tbilisi TV-center. Besides this, a broadcasting transmitter of "RV-7" type was rebuilt and the new transmitter with anode modulation twice as powerful as the old ones was put into operation in January 1958. Akhvlediani, Ivanov, Muradova, Dzhachvadze, Chikhladze, Babadzhanov, D'yakonova, Gamkrelidze, Khavtasi, Prishchepa, V. Babayan, etc., contributed much to the rebuilding of this transmitter, which allows the transmission of regional programs in the Russian, Georgian, Armenian and Azerbaydzhan languages. In November 1957, a broadcasting transmitter was put into operation in Sukhumi, the programs being broadcasted in the Abkhazian language. The Presidium verkhovnogo soveta Abkhazskoy ASSR (The Presidium of the Supreme Soviet of the Abkhazian ASSR) rewarded the following radio workers of this radio center with the certificate of honour for their participation in designing and installing this transmitter: Agababov, Amiranashvili, Manusadzhan, Topuzis, Gelovani, Tushishvili, Yatsenko, Drozdov T.I. and Drozdov T.M. Two more radio stations will be built and will assure regional

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111-58-6-9/25

The Development of Multiprogram Broadcasting in Georgia

broadcasting in the Adzharian ASSR and in the South Ossetic autonomous oblast'. In this way, 5 programs in 5 languages can actually be transmitted in Georgia, and next year, 7 programs will be transmitted in 6 languages.
This article contains 3 photos.

ASSOCIATION: Ministerstvo svyazi Gruzinskoy SSR (Ministry of Communications of the Georgian SSR)

1. Communications - USSR 2. Radios - Applications
3. Radio transmitters - Characteristics

Card 3/3

KHRISTESASHVILI, G.A.

Development of communication means in Georgia. Vest. sviazi 21 no.11:6-7 N '61. (MIRA 14:11)

1. Ministr svyazi Gruzinskoy SSR.
(Georgia--Telecommunication)

L 47302-65

ACCESSION NR: AT5007879 S/0000/64/000/000/0079/0088

AUTHOR: Manukyan, Yu. A.; Chkheidze, M. V.; Khristesashvili, V. G.; Machavariani, G. A. 15

TITLE: A method for constructing a Gray code counter B+1

SOURCE: AN GruzSSR. Institut kibernetiki. Elementy kiberneticheskikh sistem (Elements of cybernetic systems). Tiflis, Izd-vo Metsniyereba, 1964, 79-88

TOPIC TAGS: Gray code, computer component, flip flop circuit, counter circuit

ABSTRACT: The article discusses a method for the construction of a Gray code counter in which the parity check flip-flop is controlled not by input pulses, but by signals fed back from the main counter register. In order to minimize errors due to ambiguous readings without stopping during read-out, Gray code counters are widely used. The counting input of each flip-flop in a counter register is connected to a coincidence circuit, one input of which is connected to the output of the preceeding flip-flop. The second coincidence circuit input is connected to a delay line and the third is connected to the output of a so called forbidden-combination flip-flop. The purpose of this flip-flop is to prevent the further opera-

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L 47302-65

ACCESSION NR: AT5007879 0

tion of flip-flops after the addition of a one to any even or odd number, which is already present in the counter register. In all present Gray code counters the input counting pulses act directly on input of the parity flip-flop. Therefore, a chance error in any of the digital places will necessarily lead to a false reversal which results in a rapidly increasing and completely inadmissible error. The circuit considered in this article is distinguished by the fact that the counting pulses do not act on the parity flip-flop but go directly into one of the digital places of the counter register. The position of the parity flip-flop is changed by a signal, which indicates that switching has already taken place in the desired digital place. An error in any of the digits leads only to the loss of the pulse. The following pulse again acts on the digit in which the error occurred. However, this counter is no more reliable with respect to the parity check place than are other circuits, since there is still the possibility of a false reversal due to errors in the parity flip-flop. It should be noted that in these circuits it is possible to check the errors in the register made during counting so that this information may be used in analyzing the results. For this purpose it is only

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ACCESSION NR: AT5007879 0

necessary to introduce a half-adder into the circuit, and to connect its inputs to the input of the counter and to the output of the general register assembly respectively.

ASSOCIATION: none

SUBMITTED: 07Jul64 ENCL: 00 SUB CODE: DP, EC

NO REF SOV: 003 OTHER: 000

me
Card3/3

MANUKYAN, Yu.S.; CHKHEIDZE, M.V.; KHRISTESASHVILI, V.G.;
MACHAVARIANI, G.A.

Construction of Gray code counters. Soob. AN Gruz. SSR 31
no. 3:655-660 S '63. (MIRA 17:7)

1. Institut kibernetiki AN GruzSSR, Tbilisi. Predstavleno
chlenom-korrespondentom AN GruzSSR N.V.Gabashvili.

L 42040-65 EWT(1)/EWA(h) Peb GG

ACCESSION NR: AP5010951 UR/0286/65/000/007/0132/0132

AUTHORS: Manukyan, Yu. S.; Chkheidze, M. V.; Khristesashvili, V. G.; Kachevariani, G. A.

TITLE: Reversible counter in Grey code. Class 42, No. 169682

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 132

TOPIC TAGS: counter circuit

ABSTRACT: This Author Certificate presents a reversible counter in Grey code containing a register on triggers with counter inputs and a parity trigger. To exclude spurious reversal with isolated misalignments of any of the counter triggers, it contains a control circuit based on a semisummator, two double input collectors, a delay line, and two coincidence circuits (see Fig. 1 on the Enclosure). One input of the first coincidence circuit controlling the first digit trigger is connected to the unit output of the parity trigger, and the second input to the counter input and to the first input of the other coincidence circuit. The second input of the second coincidence circuit is connected to the zero output of the parity trigger, and its output signal is used to control the remaining counter digits. The trigger outputs of all the counter digits are connected to a common collector whose output is connected through the double input collectors to the counter input of the parity

Card 1/2

L 42040-65

ACCESSION NR: AP5010951

trigger. The output of one double input collector is connected through a delay line to the semisummator input whose output is connected to the second input of the same collector. The second input of the semisummator is connected through the other collector to both branches of the parity trigger. The reverse signals are admitted to the counter input of the parity trigger through a collector. Orig. art. has: 1 diagram.

ASSOCIATION: none

SUBMITTED: 30Mar64 ENCL: 01 SUB CODE: DP, EC

NO REF SOV: 000 OTHER: 000

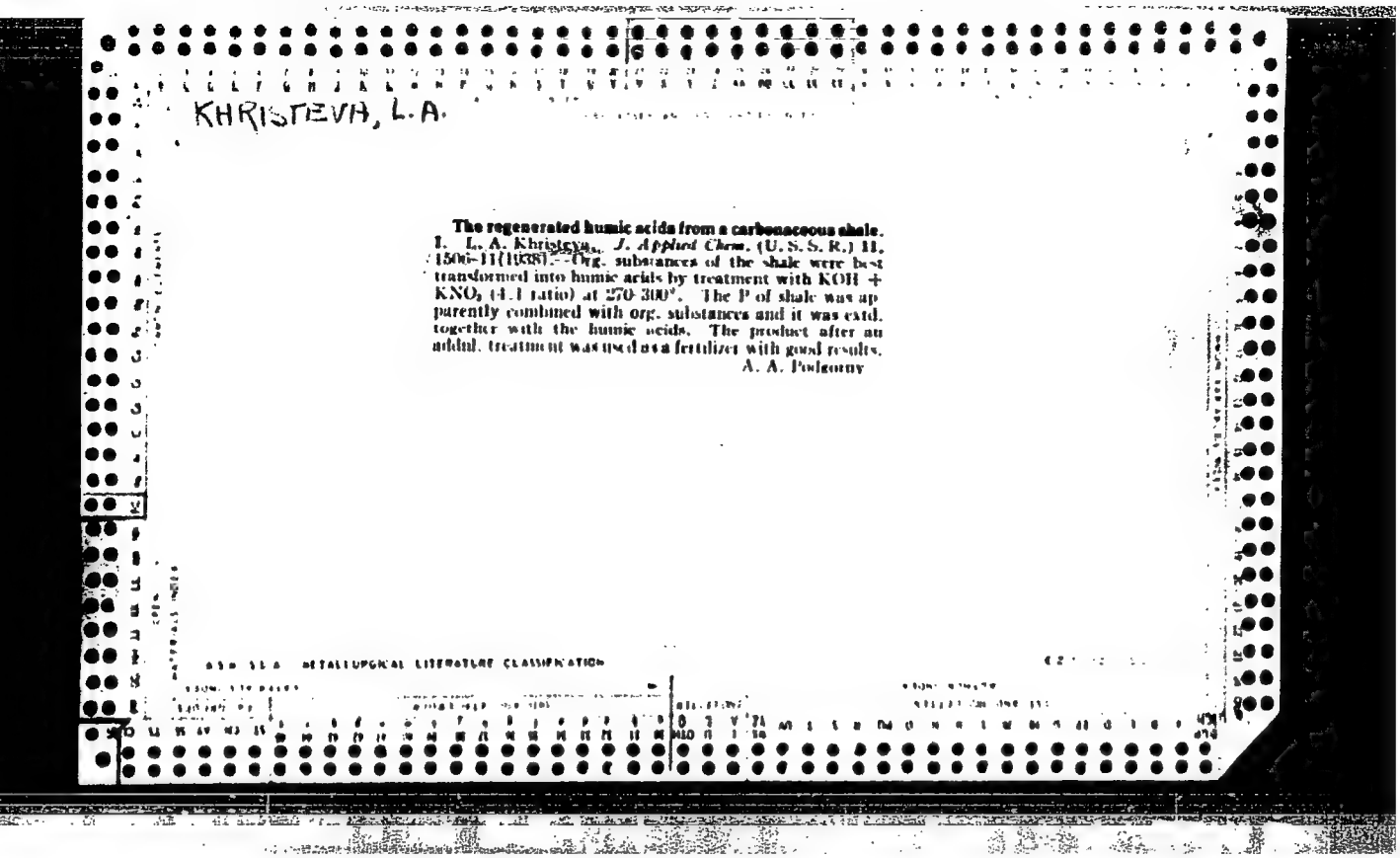
Card 2/3

DISHLIEV, B.; SHOPOV, N.; KHRISTEV, P.

Clinical aspects, diagnosis and therapy of perforating gastric and duodenal ulcers according to clinical material of 1948-56 inclusively. Khirurgiia, Sofia 11 no.2:150-158 1958.

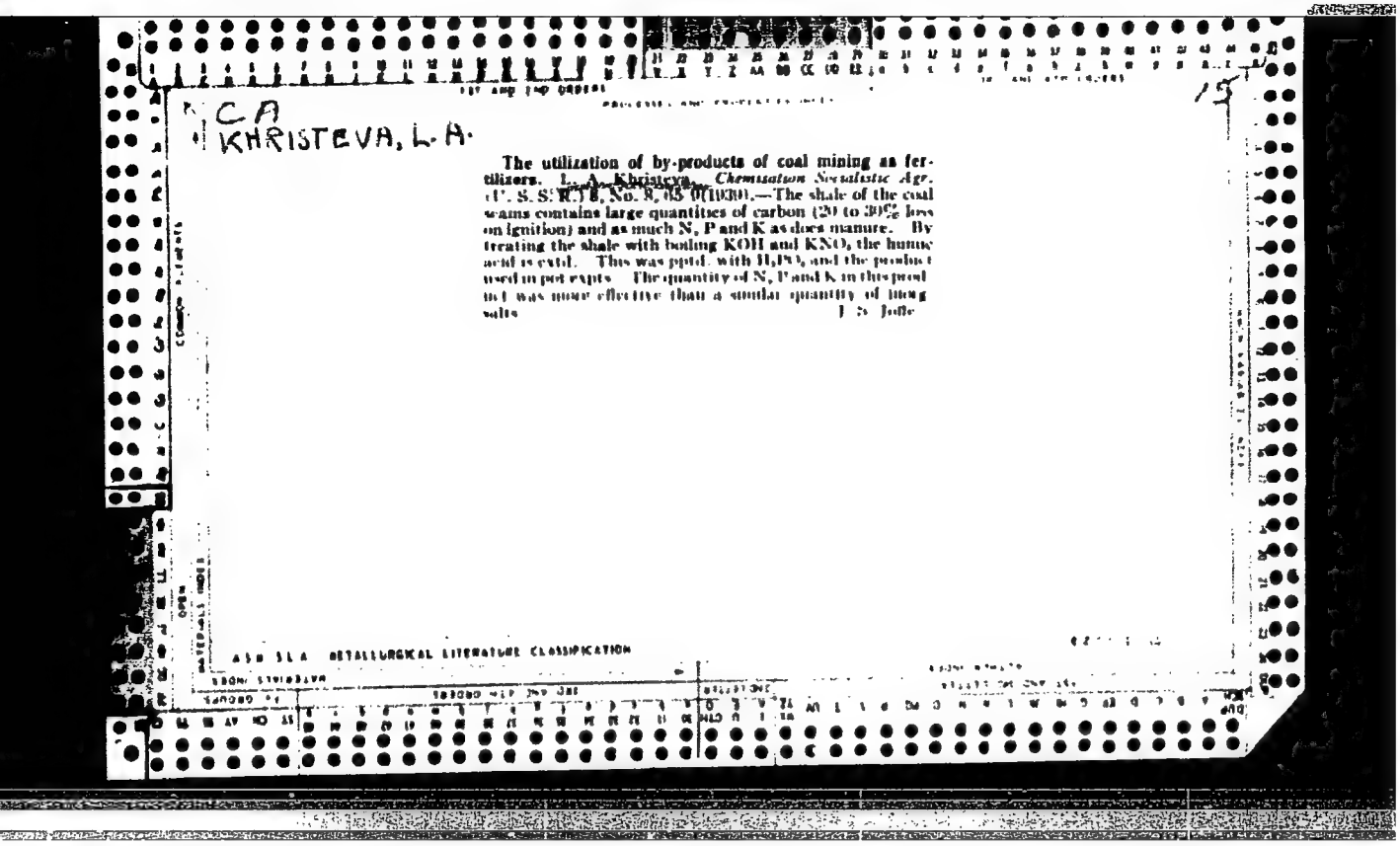
1. Vissh meditsinski institut I. P. Pavlov - Plovdiv Katedra po fakultetska khirurgiia Zav. Katedrata: dots. Ia. Dobrev.

(PEPTIC ULCER, perforation,
hosp. statist. (Bul))



KHRISTEVA, L.A.

The regenerated humic acids from a carbonaceous shale. L. A. Khristeva. *J. Applied Chem.* (U. S. S. R.) II, 1506–11(1938).—Org. substances of the shale were best transformed into humic acids by treatment with KOH + KNO_3 (4:1 ratio) at 270-300°. The P of shale was apparently combined with org. substances and it was extd. together with the humic acids. The product after an addnl. treatment was used as a fertilizer with good results.
A. A. Podgorny

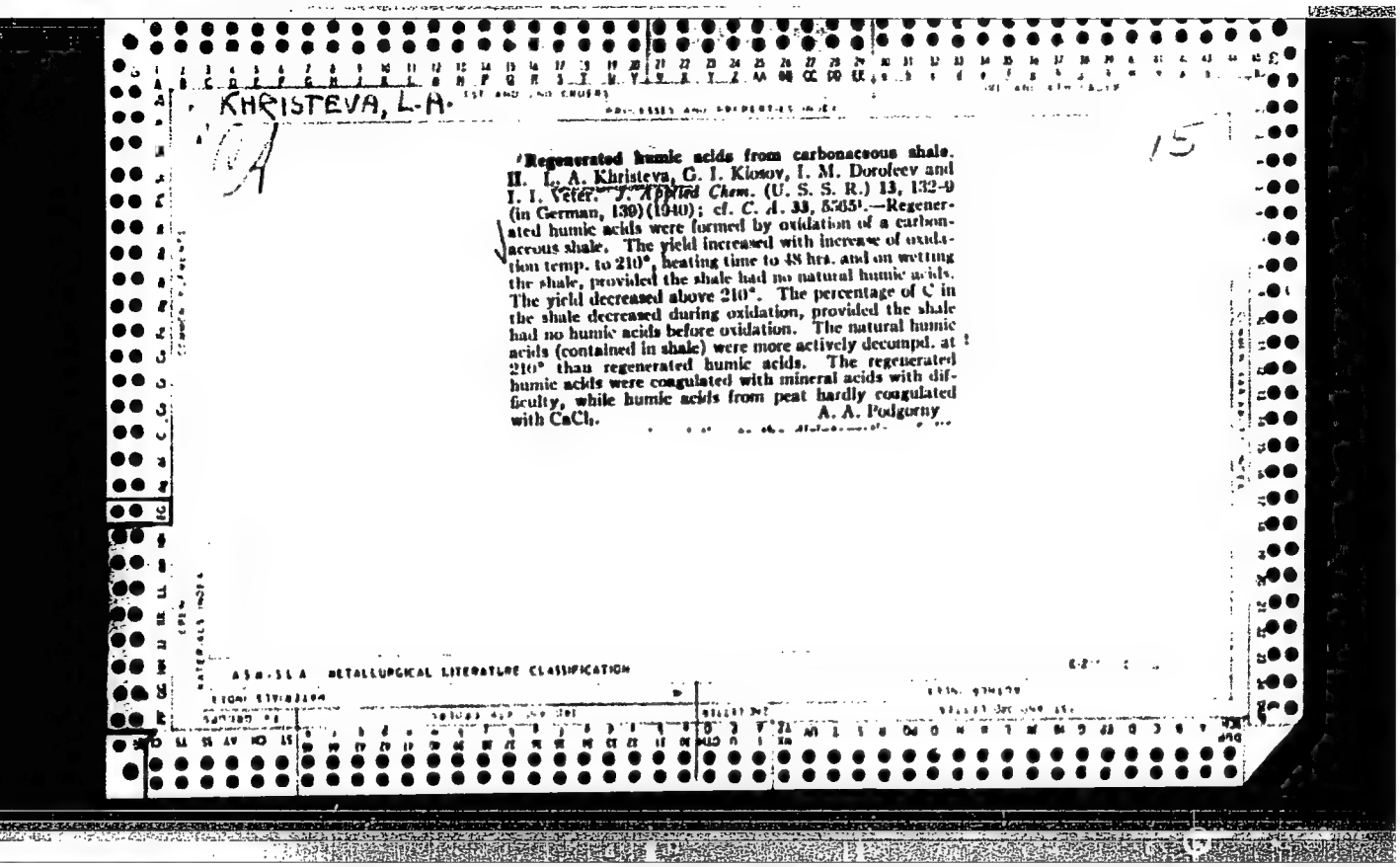


CA
KHRISTEVA, L. A.

15

The utilization of by-products of coal mining as fertilizers. L. A. Khristeva. *Chemisation Socialistic Agr.* (U. S. S. R.) 8, No. 8, 65-9(1930).—The shale of the coal seams contains large quantities of carbon (20 to 30% loss on ignition) and as much N, P and K as does manure. By treating the shale with boiling KOH and KNO_3 the humic acid is extd. This was ppted. with H_3PO_4 and the product used in pot expts. The quantity of N, P and K in the prod uct was more effective than a similar quantity of inorg salts. J. S. Joffe

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION



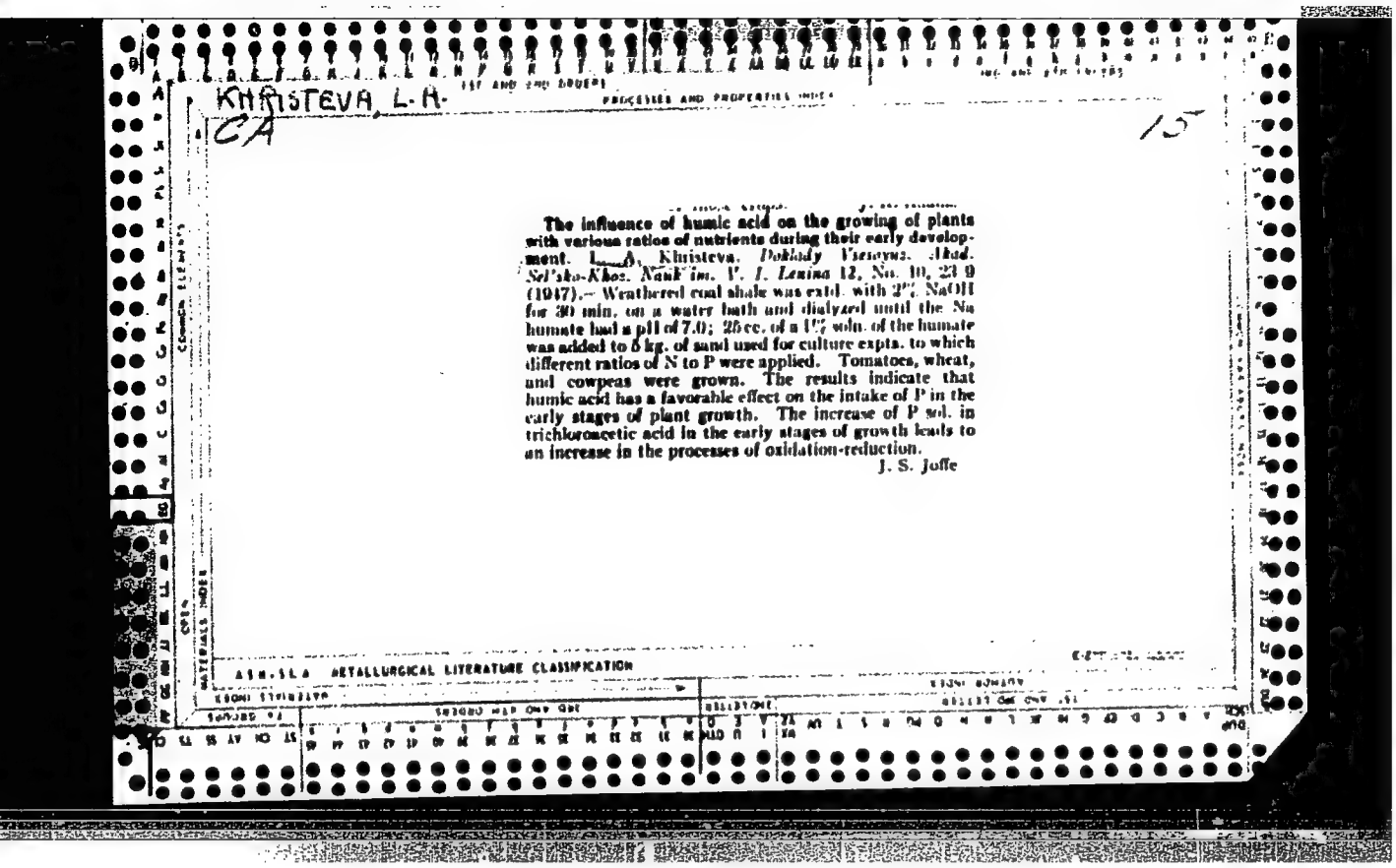
KHRISTEVA, L.A.

15

Regenerated humic acids from carbonaceous shale. II. L. A. Khristeva, G. I. Klosov, I. M. Dorofeev and I. I. Veter. *J. Applied Chem.* (U. S. S. R.) 13, 132-9 (in German, 130)(1940); cf. *C. A.* 33, 5505¹.—Regenerated humic acids were formed by oxidation of a carbonaceous shale. The yield increased with increase of oxidation temp. to 210°, heating time to 48 hrs. and on wetting the shale, provided the shale had no natural humic acids. The yield decreased above 210°. The percentage of C in the shale decreased during oxidation, provided the shale had no humic acids before oxidation. The natural humic acids (contained in shale) were more actively decompd. at 210° than regenerated humic acids. The regenerated humic acids were congulated with mineral acids with difficulty, while humic acids from peat hardly coagulated with CaCl₂.

A. A. Podgorny

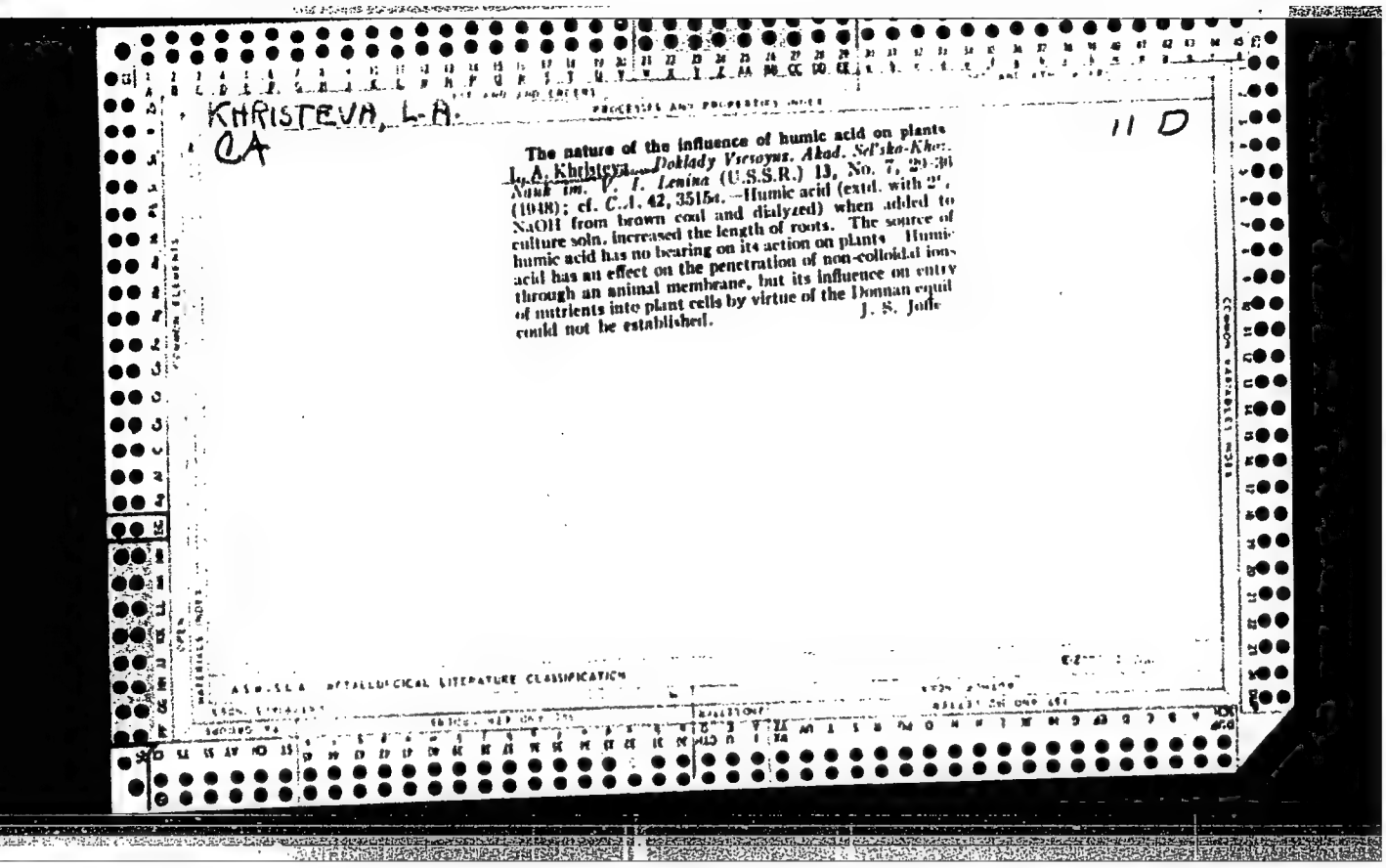
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



KHRISTEVA, L. A.
CA
15

The influence of humic acid on the growing of plants with various ratios of nutrients during their early development. L. A. Khristeva. *Doklady Vsesoyuz. Akad. Sel'sko-Khoz. Nauk im. V. I. Lenina* 12, No. 10, 23-9 (1947).— Weathered coal shale was extd. with 2% NaOH for 30 min. on a water bath and dialyzed until the Na humate had a pH of 7.0; 25 cc. of a 1% soln. of the humate was added to 5 kg. of sand used for culture expts. to which different ratios of N to P were applied. Tomatoes, wheat, and cowpeas were grown. The results indicate that humic acid has a favorable effect on the intake of P in the early stages of plant growth. The increase of P sol. in trichloroacetic acid in the early stages of growth leads to an increase in the processes of oxidation-reduction.

J. S. Joffe



KHRISTEVA, L.A.
CA

11 D

The nature of the influence of humic acid on plants. L. A. Khristeva. *Doklady Vsesoyuz. Akad. Sel'sko-Khoz. Nauk im. V. I. Lenina* (U.S.S.R.) 13, No. 7, 29-30 (1948); cf. *C.A.* 42, 3515*a*.—Humic acid (extd. with 2% NaOH from brown coal and dialyzed) when added to culture soln. increased the length of roots. The source of humic acid has no bearing on its action on plants. Humic acid has an effect on the penetration of non-colloidal ions through an animal membrane, but its influence on entry of nutrients into plant cells by virtue of the Donnan equil could not be established.

J. S. Joffe

KHRISTEVA, L. A.

CA

15

The effect of humic acid on root development of different agricultural plants. L. A. Khristeva, P. A. Novek-Khlebnikov, A. I. Zuev, N. Ts. Spiral', and Z. P. Gusak. *Doklady Vsesoyuz. Akad. Sel'skokhoz. Nauk im. V. I. Lenina* **10**, No. 8, 23-8(1940); cf. *C.A.* **42**, 3515d. Humic acid was extd. from peat, soil, and weathered coal and prepns. made with Na, K, NH_4, Ca, and Fe. The humates thus prepd. were added in different quantities to seedlings of spring and winter wheat, barley, oats, corn, millet, rice, and other plants. The seedlings were grown in soln. cultures and measurements made on root and stem development. Humic acid from peat and soil proved to be most effective in stimulating root growth. The ash constituents of the humic acid has no influence on the roots. The most potent forms of humic acid were those of Na, NH_4, and K; it is soluble forms that are most reactive. Different plants react differently to the stimulus of humic acid. The 0.0001 to 0.005% humic acid concns. proved most effective. I. S. Ioffe

KHRISTEVA, L. A. Doc Agricult Sci

Dissertation: "Humic Acids of Carbonaceous Shales as a New Type of Fertilizers." 8/3/50

Soil Inst imeni V. V. Dokuchayev, Acad Sci USSR

SO Vecheryaya Moskva
Sum 71

KHRISTEVA, L. A.

Plants-Nutrition

Role of humic acid in plant nourishment and humic fertilizers. Trudy Poch. inst.. no. 38, 1951.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

Khristeva, L. A.

Chemical Abstracts
May 25, 1954
Soils and Fertilizers

(2)

Humic acid and other organic substances in the nutrition of higher plants. L. A. Khristeva (Inst. Agr., Kherson). *Pochvovedenie* 1953, No. 10, 48–59.—A review of the effects of org. substances, such as humic acid (dialyzed from Na or K humates), vitamins, and solubilized bitumens, shows that in small quantities they exert a favorable effect on plants. In large quantities they become toxic. These results are based primarily on seedlings in soln. cultures. 25 references.

J. S. Joffe

KHRISTEVA, L A

USSR

The reciprocal relation between mineral and organic nutrition of higher plants and the utilization of humic acids as fertilizer. L. A. Khristeva, L. R. Pivovarov, A. E. Pshenichnyi, and I. T. Yafchuk (Agr. Inst., Kherson). *Pochvovedenie* 1954, No. 12, 1–10; cf. *C.A.* 47, 5598f.—Addns. of 500 ml. of 0.001% soln. of Na humate, extd. from peat, to 12 kg. of sand and the standard nutrient soln. gave a considerable increase of potatoes. With a soln. 1:1:1 of NPK as the standard, addns. of Na humate made it possible to reduce the amt. of P to 1/10 and still the yields were higher and the vitamin C content also increased. Addns. of humate had a pos. effect on the formation of invert sugars in the leaves of potatoes. With low N levels there was the highest accumulation of sugar in the leaves. During flowering, the cultures treated with humates increased the ratio of disaccharides to monosaccharides. This indicates that the humates are effective in converting the simple into more complex sugars. It is postulated that the humates are assocd. with the oxidation-reduction potentials. This is

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L. A. KHRISTEVA

inferred from the data showing that the activity of the peroxidase and catalase, under the influence of Na humate, changes parallel with the activity of the synthetic processes. In an expt. with wheat in a chestnut-brown soil it is shown that humates in the presence of sufficient N enhance the biol. utilization of P. Field expts. with cabbage, tomatoes, and forest species in shelter belts indicate substantial gains when the crops received with the irrigation water, or by applying, solns. of Na humate 500 cu. m./ha. contg. 1 ml. of a 1% soln. of humate per l. The application was made twice during the growing season. It takes 25-50 kg. of peat and 750-1500 g. of NaOH to obtain the necessary Na humate for 1 ha. Excessive amts. of humates may depress growth of plants. One hundred kg. low-moor peat was treated with a soln. of NH_4OH (4-5 l. of 24% NH_3) and a superphosphate ext. The latter was prepd. by using a 2:1 ratio by vol. of H_2O and superphosphate (30 kg.). The final product contains 0.85% N and 0.55% H_2O-sol. P_2O_5 at a 42% H_2O content. This is known as humophos.

I. S. Ioffe

Khristeva, L. A.

The stimulating action of humic acids on the life processes of higher plants. L. A. Khristeva and V. O. Dem'yanenko (Agr. Inst., Kherson). *Doposidi Akad. Nauk. Ukr. R.S.R.* 1955, No. 3, 299–301 (Russian summary, 301–2); cf. *C.A.* 48, 6064a.—In the absence of photosynthesis humic acids in conjunction with glucose and phosphate buffer lowered the C content of the plants. Glucose alone fed close to the roots of plants increased the C content. It was concluded that humic acids had no effect on C nutrition of higher plants.
B. S. Levine

MD

(1)

KHRISTEVA, L. A.

Participation of humic acids and other organic substances in nutrition of the higher plants and the agronomic significance of this form of nutrition. L. A. Khristeva (Agr. Inst., Kherson). *Izvest. Akad. Nauk S.S.S.R., Ser. Biol.*, 1955, No. 4, 58–83.—Expts. on growth of wheat, barley, potatoes, and grapes showed the following: humic acids at 0.1–0.01% concn. stimulate plant growth, particularly shown by the root systems. The most reaction is obtained with potatoes, beets, and tomatoes, followed by wheat, barley, oats, corn, rice, kok-saghyz, and alfalfa. Poppies, peas, kidney beans, lentils, and cotton plants respond the least, as do sunflower, castor bean, and pumpkin. The stimulating action is caused by the ability of humic acid to form an ionically dispersed state in which it is assimilated by the plants as a nutrient. It stimulates the phenolase oxidative action and improves O assimilation; the effect is most noted in early stages of growth. Humic acid nutrition is additive to the normal mineral nutrition; N deficiency limits the action of humic acid. The plants are also able to assimilate other physiologically active substances such as bitumens, vitamins, and vitamin-analogs (p-$Et_2NC_6H_4CHO$, norsulfazole, vitamin B_1), but their action is less pronounced than that of humic acid. Sol. humates, such as the Na salt, are suggested as a form of fertilizer introduced with irrigation waters. They improve crops of various agricultural plants more effectively than do mineral fertilizers. As raw materials, peat, brown coal, and carboniferous shale can be used. G. M. Kosolapoff

Chair Agrochem. & Plant Physiology

USSR/Soil Science. Organic Fertilizers J-4

Abs Jour : Ref Zhur - Biol., No 10, 1958, No 43856

Author : Khristeva L.A.
Inst : Not Given
Title : The Utilization of Humus Fertilizers

Orig Pub : Kolgospnik Ukraini, 1956, No 7, 26-27 (Ukrainian)

Abstract : A try-out of humus fertilizers was begun in 1953 by scientific research institutions, kolkhozes and forest preserves in Khersonskaya Oblast'. The average tomato yield boost was 55 centners per ha. when the control output was 118 and 100-104 centners per ha. when the yield in the control was 200-400 centners per ha. This yield boost was obtained on chestnut soils when 7-10 t. per ha. of litter were placed in the holes and on sand soils with the application of 10 t. per ha. of peat in a mixture with 1.5 centners per ha. of mineral fertilizers. The addition to the young cabbage crop through the application of humophos totaled 60-120 centners per ha. and to the late cabbage crop 170 centners per ha.

Card : 1/2

Abs Jour : Ref Zhur - Biol., No 20, 1958, No 91477

Author : Khristeva L.A., Yarchuk I.I., Kuz'ko M.A.
Inst : Kharkov Univ.
Title : Physiological Principles in the Technology of Humus Fertilizers.

Orig Pub : V sb.: Gumnovyye udobreniya. Khar'kov, Khar'kovsk. un-t, 1957, 163-184

Abstract : No abstract

Card : 1/1

Abs Jour : RZhBiol., No 6, 1959, No 24660

Author : Khristeva, L. A.
Inst : Khar'kov University.
Title : Carbonaceous Shale as One of the Possible

K

COUNTRY : USSR
CATEGORY : Forestry. FOREST CULTURES.

ABS. JOUR. : Ref Zhur-Biologiya, No.1, 1959, No. 1483

AUTHOR : Khristeva, L.A.; Ponomarenko, V.A.; Kotlyubi, V.G.
INST. : Kharkov Univ.
TITLE : Effect of Humic Fertilizers on the Growth of Pine, the Chief Afforestation Culture of the Lower Dnieper Sands.

ORIG. PUB. : V sb.: Gumusovye udobreniya. Khar'kov Khar'kovsk. un-t, 1957, 313-330

ABSTRACT : By experiments at the Golopristanskiy Leskhoz(1953), it was established that humic fertilizers raise the vitality and drought-resistance of pine in the lower Dnieper sands. It is recommended that in nurseries humophos and watering with a 0.001 % solution of sodium humate be applied in combination with supplementary mineral fertilizers. It is expedient to activate planting material of a different district by wetting the root syste

CARD: 1/2

28

Khristeva, L.A.

USSR/Plant Physiology - General Problems. I.

Abs Jour : Ref Zhur - Biol., No 18, 1958, 81970

Author : Khristeva, L.A.

Inst : Kherson Agricultural Institute.

Title : Physiological Function of Humic Acid in the Nutrition of Higher Plants

Orig Pub : Nauchn. zap. Khersonsk. s.-kh. in-t, 1957, vyp. 6, 47-60

Abstract : The stimulating action of various polyphenols (I) and of their derivatives-hydroquinone, guaiacol and tannin - was compared with the action of sodium humate (II) in experiments with summer wheat. All substances were used in concentration of 0.0001%. I, particularly tannin and guaiacol, stimulated the growth of plants but to a lesser degree than II. II greatly increased the absorption of O_2 by plant tissues (the determination was

Card 1/2

USSR/Soil Science Organic Fertilizers. J

Abs Jour : Ref Zhur - Biologiya, No 11, 1958, No. 48666

Author : Khristeva, L. A.; Yarchuk, I. I.; Kotlyuba, V. G.

Inst : Kherson Agricultural Institute

Title : Agricultural Principles in the Technology of Humus Fertilization

Orig Pub : Nauchn. zap. Khersonsk. s.-kh. in-t, 1957, vyp. 6, 83-102

Abstract : In a large number of experiments conducted during the course of several years, the dose significance of humic acids and humus fertilizers on crop harvests was investigated; also studied were problems connected with the manufacture and application of soluble humates and organic-mineral humus as fertilizers. Of all

Card 1/3

USSR/Forestry - Forest Plants.

K-5

Abs Jour : Ref Zhur - Biol., No 2, 1958, 5908

Author : Khritsteva, L.A., Ponomarenko, V.G., Rumyantseva, V.M., Kotlyuba, V.G.

Inst : Kherson Agricultural Institute

Title : The Influence of Humic Acid on the Growth of Pines in Nurseries and Tree Plantations Set out in the Autumn on the Lower Dnepr Sands.

Orig Pub : Nauchn. zap. Khersonsk. s.-kh. in-t, 1957, No 6, 125-133

Abstract : In order to explain the effect of humic acid on the quality of planted material, experiments were conducted in 1953 in the Golopristanskiy Forest Economy, Khersonskaya oblast', in the nutrition of common pines which had not attained full growth. Sodium humate in a 0.001% concentration was used as a humic fertilizer. It was applied by

Card 1/3

KHRISTEVA, L. A.

"Die Rolle Der Huminsäuren Und Einiger Vitamine Bei Der Pflanzenernährung".

report submitted for the 7th Congress of International Society of Soil Science Madison, Wisconsin, 15-23 Aug 60.

KHRISTEVA, L.A.

Physiological role of humic acids and some vitamins in the life of higher plants. Trudy Inst. mikrobiol. no.11:34-40 '61.
(MIRA 16:11)

1. Dnepropetrovskiy sel'skokhozyaystvennyy institut.

KHRISTEVA, L. [Khrystieva, L.], doktor sel'skokhoz.nauk, prof.

Is it dead capital? No! Nauka i zhyttia 12 no.10:25-26 O '62. (MIRA 16:1)

(Ukraine—Fertilizers and manures) (Peat)

KHRISTEVA, L.A.; LUK'YANENKO, N.V.

Role of physiologically active substances of soils, humic acids, bitumens, and vitamins B2, C, P-P, A, and D in the life of plants and ways for replenishing them. Pochvovedenie no.10:33-37 O '62. (MIRA 15:11)

1. Dnepropetrovskiy sel'skokhozyaystvennyy institut.
(Soil chemistry) (Plant physiology)

L. A. Khristeva (USSR)

"Theory and practice of application of humic fertilizers in the Ukraine"

Report submitted for the2nd International Peat Congress, Leningrad, 15-22 Aug 63.

VELEV, Dimitur, k. t. n., inzh.; BUKHCHEV, Georgi; KHRISTEVA, Mariia, inzh.

Characteristics of mazut, and their influence on the flame during combustion. Tekhnika Bulg 13 no. 2: 19-20 '64.

1. "Druzhba" Glass Factory.

BEGAGOYEN, I.A., kand. tekhn. nauk; KHRISTIANINOVA, G.P., inzh.

Study of screw pairs with moving spacers. Sbor. nauch. trud. KGRI no.13:85-89 '62. (MIRA 16:8)

(Boring machinery--Equipment and supplies)

BYCHKOV, V.P.; KHRISTIANOV, A.S.

Thermogravimetric apparatus based on the TV-200 torsion balance.
Zav. lab. 29 no.10:1267-1269 '63. (MIRA 16:12)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova.

KHRISTIANOV, A.S.; KOROVYATNIKOV, G.F.

Apparatus for the simultaneous fixing of differential-thermal and thermogravimetric measurements. Zav.lab. 30 no.4:495-496 '64. (MIRA 17:4)

1. Institut obshchey i neorganicheskoy khimii AN SSSR imeni N.S.Kurnakova.

KHRISTIANOV, V.K.

Analysis of ore samples. V. K. Khristianov. U S S R 109,083, Dec. 25, 1957. B in ore samples is determined by the adsorption of slow neutrons. The app for this determination consists of a source of neutrons, a rectangular chamber in which is placed the sample, ionization chamber, and an electrometer. The ionization chamber is filled with BF_3 enriched by the isotope of B^{10} at 2 atm. pressure.

1/1 Distr: 4E4j/4E3d/4E3b

KHRISTIANOV, V.K.

403. **Determination of the boron content of minerals by the method of neutron analysis.** V. K. Khristianov and G. I. Panov (V. I. Vernadsk. Inst. Geochem. and Anal. Chem. Acad. [illegible] Moscow). *Zhur. Anal. Khim.* [illegible] 12 [illegible] 366.—The sample in a copper vessel is placed between a neutron source (Po plus Be) and a scintillator detector containing B (ratio of ZnS : B = 3.5) with a photomultiplier. The results are affected by the content of H_2O (effect of H), so standards of similar content must be used. The method is sensitive to 0.02% of B. With contents of B of ≃8% the error is ≃ ± 20% of the content.

G. S. Smith

7(5) 3(0)

AUTHORS: Baranov, V.I., Khristianov, V.K. SOV/7-58-7-9/15

TITLE: Borometric Profiling by the Neutron Method (Borometricheskoye profilirovaniye neytronnym metodom)

PERIODICAL: Geokhimiya, 1958, Nr 7, pp 680 - 681 (USSR)

ABSTRACT: To state the boron content in soils the authors have developed the following method: a neutron source in the intensity of 1.10^7 n/sec is fixed under a water reflector, 24 cm next to a neutron end-detector. The appliance is moved with 4 - 5 km/h, the intensity is recorded visually with an indicating instrument. By its absorption of neutrons 0.01% B_2O_3 can be ascertained.

A depth up to 10 - 15 cm can be examined. A figure shows the boron distribution which has been fixed for a length of 1.5 km. There are 1 figure and 3 Soviet references.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im.V.I.Vernadskogo AN SSSR, Moskva (Institute for Geochemistry and Analytical Chemistry imeni V.I.Vernadskiy, AS USSR, Moscow)

Card 1/2

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67913
SOV/20-129-5-20/64

AUTHORS: Baranov, V. I., Khristianov, V. K., Karasev, B. V.

TITLE: Photoneutronic Method of Determining the Concentration of Deuterium in Natural Water

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 5, pp 1035 - 1037 (USSR)

ABSTRACT: The usual method of determining the deuterium concentration in water exhibits certain difficulties. They can be eliminated by the here described method, when making use of the photocleavage of heavy water (Refs 2,3). The deuterium concentration can be easily and quickly determined in water within an accuracy of ± 1 % by combining an adequately strong γ-radiation source with an efficient method of neutron moderation and recording. The water sample is irradiated by a γ-quanta beam from Na^{24}. The neutron resulting due to the reaction D^2 (γ,n) H^1 is recorded by appropriate counters. The threshold of this reaction is 2.22 Mev, its cross section being $1.2.10^{-27}$ cm^2 (Ref 4). Under standard conditions of measurement the number of emitted neutrons is proportional to deuterium concentration in water. By determining the counting rate of

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Photoneutronic Method of Determining the Concentration of Deuterium in Natural Water

both a standard sample of water and the sample to be investigated, the deuterium concentration in the latter can be easily calculated. The above method was experimentally checked by the authors. Na^{24} served as γ-radiation source. With its γ-radiation energy (2.76 Mev), element Be only is capable of emitting neutrons under the action of hard γ-quanta. The (γ,n)-reaction cross sections are approximately the same for D_2O and Be. Figure 1 shows the arrangement in which the measurements were made. It consists of a cylindrical lead block 1 which is bedded in a paraffin reflector 2. In the middle of the block there is a roughly spherical container 3 with three tubes 4,5,6. 20 proportional counters 7 with B^{10}-concentrated boron fluoride are arranged in an annular spacing of the lead. The radiation source 8 is situated in the center of container 3. Due to the short lifetime of Na^{24} the authors were forced to content themselves with the accuracy of $\pm 2.5 \div 1.5\%$ determined by a single calculation. Up to a D_2O concentration of 0.1784% a linear dependence of the counting rate on the deuterium content was determined (Fig 2,I). The error due to water contamination was determined. Such elements

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Photoneutronic Method of Determining the Concentration of Deuterium in Natural Water

as B,Cd, Cl are apt to distort the determination result. Figure 2, II, shows the results of such an experiment. Thus Cl^1 in an amount of 0.24% causes the determination result of D_2O to appear lower by 1%. Apart from Na^{24}, Y^{88} might be used for the above purpose (T=105 days), but the required amount should be larger by dozens of times as compared to Na^{24}. Natural isotope ThC'' (Tl^{208}) seems to be promising. Its ancestors RaTh (Th^{228}) and $MsTh_1$ (Ra^{228}) have half-lives of 1.9 and 6.7 years respectively. The authors investigated the applicability of RaTh. The preparation generates neutrons itself. Chemical purification reduced this emission to about 1/5. Another possibility would be that of preparing metallic 99.9 ÷ 99.99% pure thorium enriched by radio thorium. By preliminary experiments the authors confirmed on principle the determinability of deuterium in natural water within a high accuracy. There are 2 figures and 6 references, 3 of which are Soviet.

PRESENTED: July 17, 1959, by A. P. Vinogradov, Academician

SUBMITTED: July 14, 1959

Card 3/3

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S/007/60/000/006/001/010
B002/B067

21.7100

AUTHORS: Baranov, V. I., Khristianov, V. K., Karasev, B. V., Korobov, S. S.

TITLE: Neutron-borometric Profiling

PERIODICAL: Geokhimiya, 1960, No. 6, pp. 490 - 497

TEXT: At the radiogeokhimicheskaya laboratoriya Instituta geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR (Radiogeochemical Laboratory of the Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy AS USSR) an instrument for neutron-borometric profiling was developed in the course of the last years. In principle it consists of a sleigh (Fig.1) carrying a 5 cm thick paraffin reflector layer (3), a moderator (7) with the neutron source (8) and detectors with oriented action for neutrons and gamma quanta. The first one (9) is a proportionality counter in a boron-cadmium screen (11), the second (4) is a packet of CTC-6 (STS-6) halogen counters protected by a lead coating (6). A small cadmium metal foil is placed between the counters. The detectors are arranged symmetrically to the radiation source at a

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Neutron-borometric Profiling

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distance of 38 cm. The apparatus is drawn by a car at a speed of 6-8 km/h; the car carries the CP-14 (SG-14) recorder. With a polonium-beryllium source with 0.8-1 10^7n/sec 200 to 300 Imp/sec could be counted. The sensitivity was experimentally examined between 0.01 and 0.15% B_2O_3. The range of detection reaches to about 15-20 cm. Chlorine is recorded as anomaly by the n,n probe, i.e., 0.6% NaCl correspond to the effect of 0.01% B_2O_3. The limit of boron detection is 6% NaCl.

Disturbances due to uneven ground are unimportant and may be easily corrected. The practical testing of the instrument proved its superiority over recordings by means of individual tests. There are 7 figures and 10 Soviet references.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy AS USSR, Moscow)

SUBMITTED: April 7, 1960

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B002/B067

Fig.1

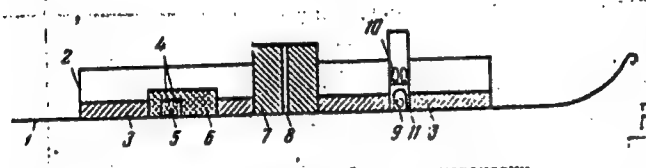

FIG. 1

Рис. 1. Схематический разрез установки

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ACCESSION NR: AP4030336 S/0049/64/000/003/0349/0353

AUTHORS: Baranov, V. I.; Khristianov, V. K.; Karasev, B. V.; Panov, G. I.

TITLE: Measuring boron by the neutron method in outcrops and mine workings

SOURCE: AN SSSR. Izv. Ser. geofiz., no. 3, 1964, 349-353

TOPIC TAGS: boron, neutron sonde, neutron logging, SNMO 5 counter

ABSTRACT: The authors describe a portable instrument used for boron detection and measurement by neutron bombardment and furnish results of field tests. To make the instrument portable it was necessary to reduce the weight of current devices and, consequently, to reduce the power of the neutron source. The neutron retarder and reflector were combined in a single block. Sondes near the inversion value were employed, and this required a minimal length of 40 cm. Shorter sondes were too insensitive. The first instrument constructed weighed 16.5 kg and was tested in the field in 1960. A later model, tested for the present study, weighs but 8 kg. The instrument has three parts: 1) a retarder-reflector of 5-liter capacity, immersed in water; 2) a cassette with two SNMO-5 counters in a P-shaped boron-cadmium shield; and 3) a panel with amplifier, discriminator, transmitter,

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ACCESSION NR: AP4030336

actuator, generator, and rate counter. Sensitivity was found to be 0.01% B_2O_3 for a 10% decline in counter rate. Results on surface rocks and in mine workings show the instrument to be satisfactory for rapid determination of boron mineralization without selection of rock samples. Results of profiling and of laboratory tests on the areas investigated are in good agreement. The instrument is suitable for exposed or slightly covered rocks. Either continuous or isolated readings may be made, and work may be carried out rapidly, permitting large areas to be covered quickly. Orig. art. has: 4 figures.

ASSOCIATION: Akademiya nauk SSSR Institute geokhimii i analiticheskoy khimii im. V. I. Vernadskogo (Academy of Sciences SSSR, Institute of Geochemistry and Analytical Chemistry)

SUBMITTED: 17Jul62 DATE ACQ: 29Apr64 ENCL: 00

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Card 2/2

BARANOV, V.I.; BARSUKOV, V.L.; IVANOVA, V.F.; KHRISTIANOV, V.K.; SURKOV, Yu.A., kand. fiz.-matem. nauk, otv. red.

[Neutron methods of research and analysis of boron-containing raw materials] Neitronnye metody poiskov i analiza bornogo syr'ia. [By V.I.Baranov i dr.] Moskva, Izd-vo "Nauka," 1964. 139 p. (MIRA 18:1)

BORSHCHEVSKIY, Yu.A.; KHRISTIANOV, V.K.

Isotopic composition of the crystallization water of saline minerals. Geokhimiia no.7:844-850 Jl '65. (MIRA 18:11)

1. Submitted January 13, 1965.

KHRISTIANOVA, L. A.

Khristianova, L. A., Cand. Chem. Sci.--(Diss)
"Radiotechnical Analysis of Deep water Marine Depesits in Connection with Determination of the Rate of Sediment Accumulation." Mos. /Publishing House of the Acad Sci USSR/ 1958. 19 pp (Acad. Sci. USSR. Inst. of Geochemistry and Analytical Chemistry im V. I. Vernadskiy), 200 copies (KL,46-58, 138)

BARANOV, V.I.; KHRISTIANOVA, L.A.

Concerning the notes by S.M. Grashchenko and others on V.I. Baranov and L.A. Khristianova's article "Radioactivity of waters in the Indian Ocean." Geokhimiia no.7:651-652 '60. (MIRA 13:11)

(Indian Ocean--Radicactive sustances)
(Grashchenko, S.M.)

BARANOV, V.I.; KHRISTIANOVA, L.A.

Age of bottom sediments in the Pacific Ocean. Geokhimiia no.3: 277-290 Mr '65. (MIRA 18:7)

1. V.I.Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences of the U.S.S.R., Moscow.

KHRISTIANOVA, L.I.

V.I. BARANOV, L.I. KHRISTIANOVA (USSR)

"Radioactivity of oceanic sediments."

Report presented at the Conference on Chemistry of the Earth's Crust, Moscow, 14-19 Mar 63.

Khristianovich, S. A.

KHRISTIANOVICH, S. A.

Ploskaia zadacha matematicheskoi teorii plastichnosti pri vneshnikh silakh, zadannykh na zamknutom konture. (Matematicheskii sbornik. Novaia seriia. 1936, v. 1, no. 4, p. 511-530)

Title tr.: The plane problem of the mathematical theory of plasticity in the case where the external forces are applied along a closed contour.

QA1.M4 1936

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

KHRISTIANOVICH, S. A.

Zadacha Cauchy dlya nelineynykh Uravneniy Giperbolicheskogo tipa. Matem sb., 2 (44), (1937), 871-900.

So: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.
Markushevich, A. I.
Rashevskiy, P. K.
Moscow-Leningrad, 1948

KHRISTIANOVICH, S. A.; MIKHLIN, S. G.; DEVISON, V. V.

Nekotorye Novye Voprosy Mekhaniki Sploshnoy Sredy (*Some New Problems of the Mechanics of a Continuous Medium*), 1938.

Khristianovich-4

KHRISTIANOVICH, S. A.

"Certain New Problems in the Mechanics of a Solid State," Publ. House Acad. Sci. USSR, M.-L., 1938

KHRISTIANOVICH, S.A.

KHRISTIANOVICH, S. A., F. I. FRANKL', and R. N. ALEKSEEVA.

Osnovy gazovoi dinamiki. Moskva, 1938. 109 p., plates, diagrs. (TSAGI. Trudy, no. 364)
Bibliography at the end of chapters.
Title tr.: Fundamentals of gas dynamics.

QA911.M65 no. 364

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

KHRISTIANOVICH, S. A.

Obtekanie tel gazom pri bol'shikh dozvukovykh skorostiakh. Moskva, 1940. 52 p., diagrs. (TSAGI. Trudy, no. 481)

Title tr.: Streamline flow of gases around bodies at high speeds approaching sonic speed.

DNACA RPB (microfilm)

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

KHRISTIANOVICH, S. A.

"Gas Flow Around Bodies at High Sub-Sonic Velocities," In Honor of Native Science and Technology, 1940.

Central Aero-Hydrodynamics Institute im. Zhukovskiy

KHRISTIANOVICH, S. A.

"Motion of Ground Water Which Does not conform to Darcy's Law," Prik. Matemat. i Mekh., 4, No. 1, 1940.

Khristianovich, S.A.

KHRISTIANOVICH, S. A.

O sverkhzvukovykh techeniiakh gaza. Moskva, 1941. (TSAGI. Trudy, no. 543)

Title tr.: On the supersonic flow of gases.

NCF

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

KHRISTIANOVICH, S.A.

"Supersonic Gas Flows." Trudy Ts AGI, No. 543 (1941)

KRISTIANOVICH, S. A.

"The Calculation of the Ejector." Promyshl. Aerodin. No. 3 (1944)

KHRISTIANOVICH, S.A.

SIMONOV, L.A., and S.A. KHRISTIANOVICH

Vliianie szhimaemosti na induktivnye skorosti dryla i vinta. (Prikladnaia matematika i mekhanika, 1944, v.8, no.2, p.89-98, bibliography)

Summary in English.

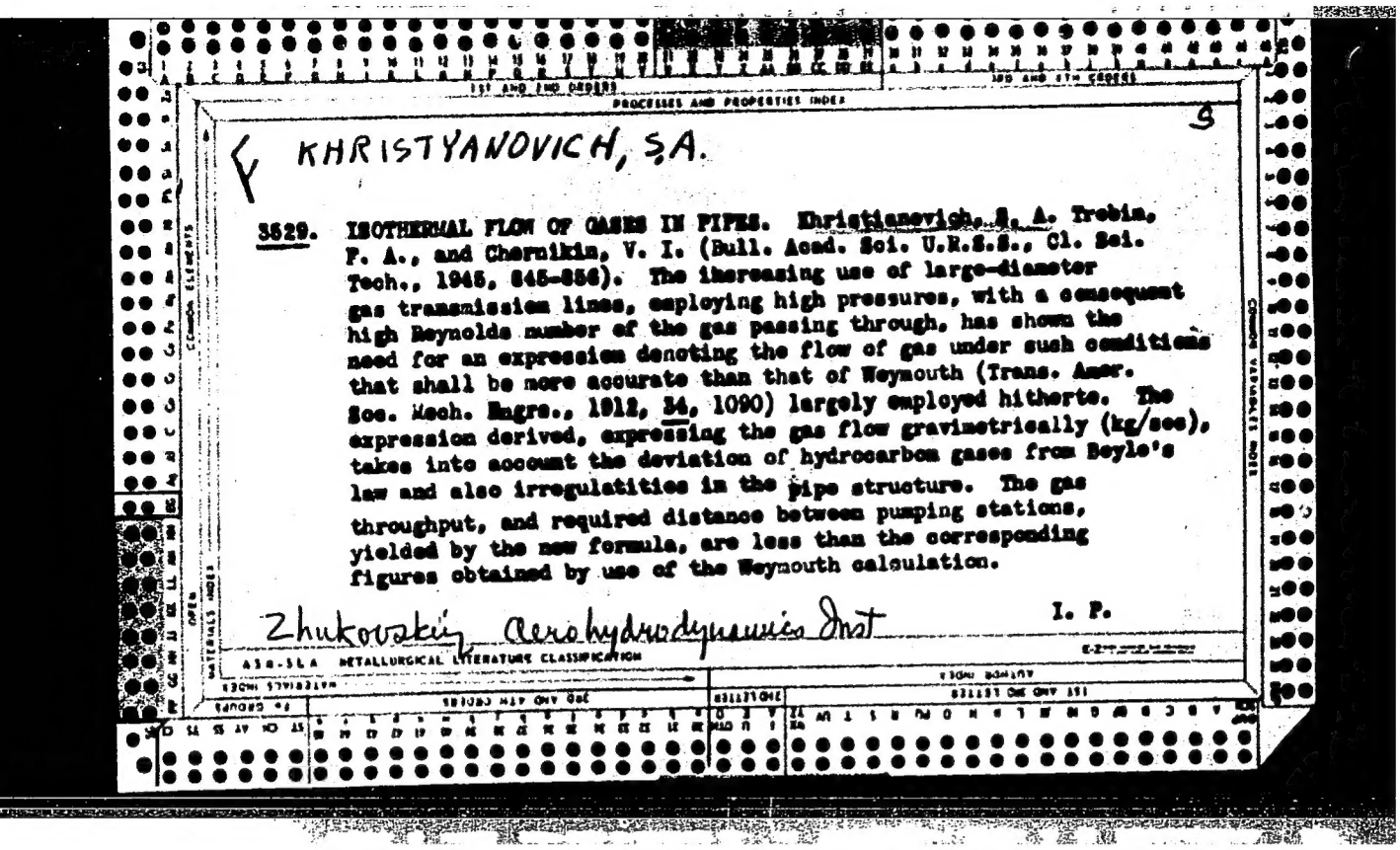
Title tr.: Effect of air compressibility on inductive velocities of an airfoil and propeller.

QA801.P7 1944

SO: aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

KHRISTIANOVICH, S. A.

"High Speed Problems" Gazette of the Air Force of the Red Army, Moscow, 1945.



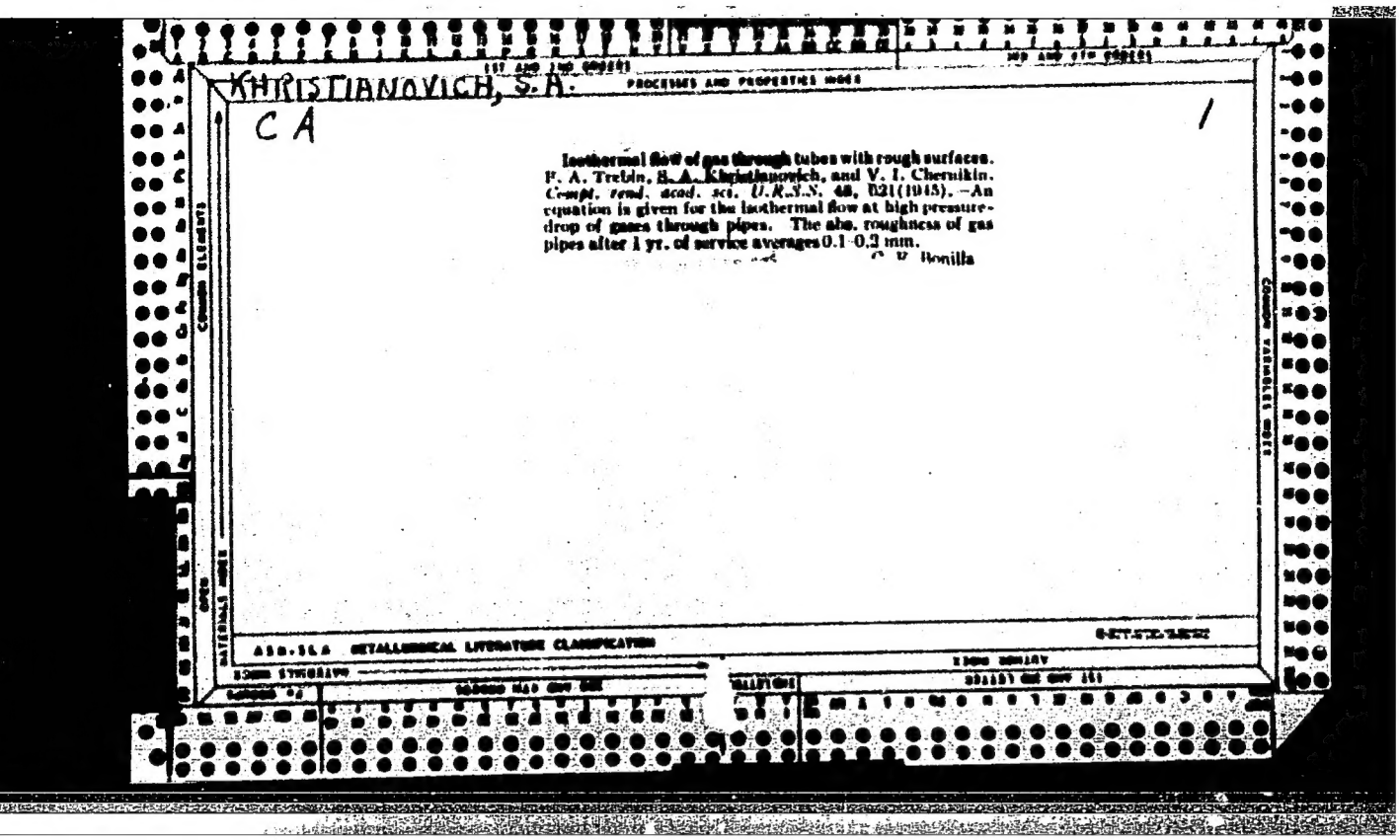
PROCESSES AND PROPERTIES INDEX

KHRISTYANOVICH, S.A.

3529. ISOTHERMAL FLOW OF GASES IN PIPES. Khristianovich, S. A. Trobin, F. A., and Chernikin, V. I. (Bull. Acad. Sci. U.R.S.S., Cl. Sci. Tech., 1945, 845-856). The increasing use of large-diameter gas transmission lines, employing high pressures, with a consequent high Reynolds number of the gas passing through, has shown the need for an expression denoting the flow of gas under such conditions that shall be more accurate than that of Weymouth (Trans. Amer. Soc. Mech. Engrs., 1912, 34, 1090) largely employed hitherto. The expression derived, expressing the gas flow gravimetrically (kg/sec), takes into account the deviation of hydrocarbon gases from Boyle's law and also irregularities in the pipe structure. The gas throughput, and required distance between pumping stations, yielded by the new formula, are less than the corresponding figures obtained by use of the Weymouth calculation.

Zhukovskiy Aerohydrodynamics Inst I. P.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



KHRISTIANOVICH, S. A.

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1

Isothermal flow of gas through tubes with rough surfaces. P. A. Treiin, S. A. Khristianovich, and V. I. Chernikin. *Compt. rend. acad. sci. U.R.S.S.* 48, 321(1945). —An equation is given for the isothermal flow at high pressure-drop of gases through pipes. The abs. roughness of gas pipes after 1 yr. of service averages 0.1–0.2 mm.

C. V. Bonilla

KHRISTIANOVICH, S. A.

"Use of Ejectors in Gas-collecting Networks." Iz. Ak. Nauk, Otdel Tekh. Nauk, No 3, 1946.

Mbr., Academy of Sciences
N. Ye. Zhukovskiy Central Aerohydrodynamics Inst.